

## 3.8 Matrix inverses handout

1) Solve the following system by finding an inverse matrix:

$$2x + 3y - 3z = 2$$

$$y - 2z = -1$$

$$x + z = 2$$

Use the same inverse to solve the following system:

$$2x + 3y - 3z = -3$$

$$y - 2z = -3$$

$$x + z = 2$$

2) Solve the following system by finding an inverse matrix:

$$x - 2y + 5z = 20$$

$$2x - 3y + 9z = 38$$

$$2x - 4y + 11z = 45$$

Use the same inverse to solve the following system:

$$x - 2y + 5z = 4$$

$$2x - 3y + 9z = 8$$

$$2x - 4y + 11z = 9$$

*Solutions:*

1)  $(1, 1, 1)$ ,  $(0, 1, 2)$

2)  $(1, 3, 5)$ ,  $(1, 1, 1)$